

National Engineering Landmark Award to Woomera

The Woomera Rocket Range has been awarded the ultimate accolade of the Institution's Historic



Engineering Plaquing Programme - recognition as a National Engineering Landmark!

The range was established under the Anglo-Australian Joint Project following the Second World War. It and the associated Weapons Research Establishment at Salisbury in South Australia were the largest and most expensive scientific and engineering

activity ever conducted in Australia in peacetime. This massive project was to South Australia what the Snowy Mountains Scheme was to New South Wales and Victoria.

Equipment used and tested on the range was at the forefront of technology especially in fine mechanics, advanced optics, telemetry and rocket fuel chemistry. While participating in

programs conducted at Woomera, Australia was amongst the most scientifically and technologically advanced nations in the world. Its successful launching of the WRESAT satellite from Woomera in 1967 gained Australia international recognition and membership.

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Dawes Point - A Place of Significant Engineering and Cultural Heritage

The historical and heritage significance of Dawes Point in Sydney Harbour, extends from Aboriginal occupation by the Eora people to the present day.

Lieutenant William Dawes, who arrived with the First Fleet, established his hut and observatory on the point and while there he befriended a young Aboriginal woman called Patyegarang. They taught one another their languages and the point is thus the site of the earliest recorded instance of European-Eora cultural interaction.

Subsequently a signal station was erected and the colony's first trafficable road was constructed by convict labour from Dawes Point to the first Government House.

To protect the colony, Dawes Battery was completed in 1791 armed with guns taken from the Sirius and subsequently there were upgradings by Francis Greenway and colonial



The archaeological site in 1996

engineer George Barney, with occupation by the military ceasing in 1902.

During construction of the Sydney Harbour Bridge the battery and guardhouse were demolished. Other buildings were used as offices by the bridge contractors Dorman Long and then demolished in 1932 upon completion of the bridge. The remains of the battery and buildings were uncovered by archaeologists in 1995.

Construction of the bridge involved excavation of a horseshoe-shaped tunnel into

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Throughout the country are many collections of interest and importance in the study of our engineering heritage. The collections range from the professionally conserved items in the Power House Museum in Sydney to those kept by enthusiastic amateurs in a backyard shed.

From time to time we intend bringing you details of these collections. Readers who visit them may, by their support, assist in maintaining important parts of our country's heritage. This is particularly important for moveable items which often are not well protected or even appreciated by the "place" dominated heritage authorities in this country.



The first diesel-hydraulic locomotive on the NSW system

from
Professor Ray Whitmore —
for "Train Buffs"

During a short holiday recently on the Central Coast of NSW I spent a day with Keith Jones and his enthusiastic band of volunteers at the Dorrigo Railway Museum at the head of the Bellinger Valley. This remarkable collection of historic NSW railway equipment is claimed to be the largest in the Southern Hemisphere and includes



Two of the oldest locomotives in the collection

some 60 locomotives and over 280 other items of rolling stock (see photographs). Unfortunately its opening to the public has up to now been fraught with legal difficulties but these have now been overcome. The land around the old railway station is to be developed as a static display and a considerable length of track has been acquired for running tourist trips down the line in due course. The developments are supported by the 700-strong Dorrigo Steam Railway and Museum Limited, details of membership of which can be obtained from Keith Jones at P.O. Box 200, Dorrigo, NSW 2453.

from Keith Hardy - TELSTRA'S HISTORICAL RELICS

In the mid 1940s the NSW Branch of the Post Master General's Department (PMG's) began organising a collection of early telegraph, telephone and postal artefacts. Overseen by a succession of PMG/Telecom "Historical Officers", the collection grew over the subsequent years, frequently from donations by former employees and others.

In 1975 the PMG was divided into the Australia Post and Telecom Australia Commissions and the historical collection was similarly deployed. This was difficult with telegraphic relics because telegraphy shared plant and technical staff with the telephone system.

Telegraphists and messengers were Postal staff, and hence Australia Post retained a very strong interest in this section of the former PMG relics. So this group of relics tends to be more people oriented than the Telstra portion. After a number of vicissitudes the Telecom collection became located at the Ashfield old Post Office building. This was refurbished by Telstra and by agreement is managed by the Telecommunication Society of Australia.

Considerable work by a small group of dedicated former Telstra/Postal people, resulted in the construction of a fine display area in the former public space of the old Post Office.

Highlights of the Ashfield display are a Misdemeanors book, once in Sydney GPO, in which penalties for day by day infringements were logged by supervisors. People are interested to see an entry against the name of Norman Gillroy (later Cardinal Gillroy) who was a telegraph messenger in the Sydney GPO during the late 1800s.

Also of interest is the picturegram equipment of the 1930s and press photographs received on it from England. This was the forerunner of the ubiquitous, facsimile machine.

The Ashfield display, besides having examples of old telegraph apparatus, has a large number of early telephones and switchboards. There is almost a complete range of telephones from the late 1800s, and also some examples of step-by-step equipment which provided early automatic switching of calls.

There is also a small theatrette for showing historical movies and video tapes. Short documentary films are held, some showing vignettes of technical and staff activity in the early periods of the 20th century and some prepared for staff instruction.

The collection includes 50,000 to 100,000 photographic negatives, some on glass plate dating from the 1800s and providing a record of technology and people until the late 1980s. However about that time Telstra ceased to have its own photographic units and the out-sourcing of this facility generally resulted in making later negatives unavailable, although there are prints from this later era.

In addition there is a considerable collection of books, journals, technical and engineering instructions and in

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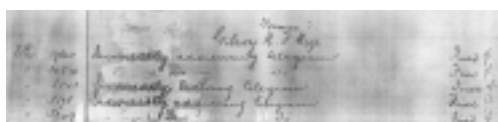
house training manuals relating to the installation, maintenance and management of all types of telecommunications. Much of this latter collection has been specifically donated.

There are a number of volunteer helpers at Ashfield, including the Manager. Many of these people have been providing essential assistance since the Ashfield site has been in use. They are involved in sorting, classifying, and organising the relics and also provide invaluable advice in the areas of their specialties.

The display at Ashfield is open for inspection every Wednesday. Phone (02) 9716 8071.



An early facsimile machine



Some of Norman Gilroy's misdemeanours as displayed at the museum

The National Committee on Engineering Heritage

The NCEH is now 20 years old as highlighted elsewhere in this issue and, as part of its steady progress towards recognizing, recording and conserving Australia's engineering heritage, we are pleased to present this, the ninth edition of the Newsletter. The Institution of Engineers is to be commended for promoting the continuity of the Committee while other Institution committees have come and gone over the years.

The NCEH is presently made up of the following members:

- Harry Trueman, Sydney - Chairman
- Michael Clarke, Sydney - Deputy chairman
- Bill Jordan, Newcastle - Immediate past chairman and Newsletter editor
- Ian Arthur, Sydney
- Keith Drewitt, Tasmania
- Peter Gesling, Newcastle
- Bruce James, Western Australia
- Hugh Orr, South Australia
- Bruce Sandie, Victoria
- Keith Baker, ACT
- Robin Black, Queensland

all ably assisted by committee administrator, Sue Mayrhofer.

The Committee also receives valuable help from nine "national" Corresponding Members from as far away as the U.K. and New Zealand with a further 10 "divisional" Corresponding Members.

National Engineering Landmark Award to Woomera

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Wording of plaque unveiled at Woomera

Woomera Rocket Range

Established under the Anglo-Australian Joint Project following the second world war, this range and the associated weapons research establishment at Salisbury, were the largest and most expensive scientific and engineering activities ever conducted in Australia in peacetime. The equipment used and tested here was at the forefront of technology especially in fine mechanics. Advanced optics, telemetry and rocket fuel chemistry.

The successful launch of the Wresat satellite from Woomera in 1967 gained Australia international recognition and membership of the exclusive "Space Club".

Dedicated by the Institution of Engineers, Australia 1999

Dawes Point - A Place of Significant Engineering and Cultural Heritage

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the rock through which 128 cables were passed and secured to the top of the end posts, to restrain the half-arch during erection until it met its northern counterpart. After the two halves met, the cables were removed and the tunnels on both sides of the harbour filled.

Dawes Point is listed on the Register of the National Estate and the Bridge, including the open spaces formed at its completion at Dawes and Milsons Points, is to be listed on the NSW State Heritage Register. The remains of the battery and

its associated buildings, the cable tunnel and the bridge itself, are the dominant features on the site.

With its formation in 1998, the Sydney Harbour Foreshore Authority became responsible for the public open space at Dawes Point. The Authority is in the process of finalising a conservation management plan including an interpretation strategy for the site, which will include the old vehicular ferry dock.

More Bridges

The Historic Bridges of Gundagai



The rail bridge main span and some of the timber truss approach spans

On Saturday 28 November 1998, the historic road and railway bridges which cross the Murrumbidgee River and its floodplain at Gundagai, were awarded an Historic Engineering Marker by the Institution. The bronze plaque was unveiled by Sydney Division President Peter Walsh.

The historic road bridge was named the Prince Alfred Bridge after Queen Victoria's second son. The iron truss over the river was completed in 1867 and the timber viaduct across the flood plain was completed in 1869, but was reconstructed at a higher deck level 30 years later.

Increased traffic and loads saw the road viaduct decommissioned and replaced in 1977 by the present steel and concrete

Sheahan Bridge 1.6km downstream, but the Prince Alfred Bridge remains in use.

When completed the Prince Alfred Bridge together with the viaduct was, at 941m long, the longest road bridge in Australia. It is now on the register of the National Estate and is classified by the National Trust (NSW). The river span is the

second-oldest existing metal truss bridge in Australia and the oldest in New South Wales. It is a British pin-jointed truss of a type that did not appear in the USA until the 1880s, and has the unique feature of the trusses being suspended from a continuous horizontal top member, supported on roller bearings on vertical posts at each pier. It and the railway truss downstream, are two of the three pin-jointed trusses still in use or in their original position in New South Wales - the other is the Whipple truss road bridge at Nowra.

The railway line from Gundagai to Tumut, which included the railway bridge over the Murrumbidgee, was opened in 1903. The imposing high-level viaduct across the flood plain is comprised of 75 timber Howe-type trusses of 35 feet span, with another five on the southern side of the river. The river truss, which spans 200 feet, was erected by the Public Works Department from components supplied by an American company. It is an excellent example of a typical American hog-backed, steel, pin-jointed truss and is the



Prince Alfred Bridge - detail of roller bearing supporting continuous top chord

only surviving railway pin-jointed truss in New South Wales. It is an integral part of one of the longest railway river crossings in New South Wales, which has a total length of 1.01km.



Prince Alfred Bridge c. 1896 when the new higher level approach viaduct was being built



Details of pin joints on rail bridge truss

The World's First Concrete Arch Dam: 75-Miles Dam 1880



75-Miles Dam in 1998, view from the left bank

Since the early European settlements in Australia, the coastal and continental development of the country has been linked with the availability of water supply. Australia's economy has been highly dependant upon its agriculture and railway network which in turn rely on surface irrigation and railway water supply for steam locomotives. During the 19th century, a series of arch dams was built for these purposes. They included advanced technological features which were acknowledged world-wide. One advanced design was the world's first concrete arch dam : 75-Miles dam completed in 1880.

The 75-Miles dam was built by Henry C. STANLEY (1840-1921) as a water supply for the Warwick-Stanthorpe railway line. The 1880 structure was a thick arch design and it was the world's first concrete arch dam. The dam was heightened in 1901 by addition of a concrete wall and three buttresses. The dam is still used today as a reserve. In the period 1880-1900, the

Australian arch dam experience was renowned. The 75-Miles demonstrates the soundness of the arch design and it highlights that the skills of the Queensland engineers.

The 75-Miles dam was the first concrete arch dam built in

Australia and the oldest concrete arch dam in the world. It was the second arch dam completed in Australia after the Parramatta masonry dam (1856). It was also Australia's second dam built entirely of concrete. The 1880 dam is a precursor of the concrete dams built in Australia and in Queensland at later dates and it is one of the earliest concrete dams in the world. The world's first concrete dams were the Boyds Corner dam (New York, USA, 1872) built between 1866 and 1872, the Pérolles dam (Switzerland, 1872) built from 1869 to 1872 and the Lower Stony Creek dam (Geelong VIC, 1873). All these structures were gravity dams.

The use of concrete as a construction material for arch dam marked a turn in the historical development of arch dams because it allowed the development of more advanced arch designs (CHANSON and JAMES 1999). For example, the double-curvature "cupola" arch¹ and constant-angle variable-radius arch² designs which are common arch dam

techniques today : e.g., the Moogerah dam (1961, Ipswich QLD). Hence the 75-Miles dam is a true milestone in arch dam development.

Access to the dam

The access to the dam can be done on foot via the Oaklands property or by train. [To access the dam on foot, start from Warwick, follow the New England Highway, turn left (Rosenthal Rd) and follow the Connolly dam signs. Follow the road straight past the Connolly dam branch. At the end of the sealed road, continue straight onto the Oaklands property (2nd property after the steel gate). From the Oaklands property, follow a 4WD (or horse) track East up to the Northern end of the tunnel. Follow the railway North less than 1 km. The dam is on the slope, east of the line, in a bend overlooking the railway. A culvert (1.8-m high by 2.5-m wide and probably built between 1878

and 1879) passes underneath the railway line downstream of the dam.]

The dam may also be accessed using railway maintenance cars from Warwick (contact Queensland Railways).

On a map, the dam is located about 1 km North of the tunnel (East of the Oaklands property) on the Eastern side of the railway. It is not shown on the Map 9341, Edition 1, Series R631 (1971)

of the Royal Australian Survey Corps. (CHANSON and JAMES 1998)

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CHANSON, H., and JAMES, D.P. (1998). "Historical Development of Arch Dams in Australia : from Advanced Designs to Engineering Failures." *Research Report CE 157*, Dept. of Civil Engineering, The University of Queensland, Brisbane, Australia, August, 133 pages (ISBN 1 86499 0791).



75-Miles Dam near completion in 1880

In Press

CHANSON, H., and JAMES, D.P. (1999). "Une Histoire Révisée des Barrages-Voûtes (de l'Antiquité à 1900)." ('A Revised History of Arch Dams (from Antiquity to 1900).') *Annales des Ponts et Chaussées, Ingénieur Science Société*, (ISSN 0152-9668) (in French).

¹ The world's first cupola arch dam was the Ithaca dam (1903, New York, USA) which was designed by Professor G.S. WILLIAMS (1866-1931). The structure was designed to be a 27-m high structure but construction was stopped when the dam height reached 9-m because of local opposition.

² The world's first constant-angle arch dams were built in 1913-1914 and designed by Lars R. JORGENSEN (1876-1938): Manila (Philippines) and Salmon Creek (Alaska).

Where Do They Go? - The Conservation of Engineering Documents

from Michael Clarke

What happens to your engineering papers when you “go” - your reports, research papers, calculations, designs, drawings, photographs, records and so on?

What happens to the documents of consulting engineers and companies in the construction, manufacturing, mining, industrial and private infrastructure development industries, when they run out of space, have no further use for their old papers, or when they “come to the end of the road” - go out of business or are taken over? What happens to the operating and maintenance manuals, and the working drawings of obsolete machines? These documents are a major part of the evidence of what you and those engineering companies did, of how decisions were made, of why things came to be the way they are, in fact the documents may be the only evidence of what existed after demolition and modification have taken their toll. When a processing plant or machine is discarded and the scrap recycled, the drawings and documentation may be the only detailed record to survive.

The documents not only represent your history, that of engineering companies and of engineering endeavour (in other words they are a major source of Australia’s engineering history), but they are a significant part of our engineering heritage. So what happens to them?

For government enterprises there are laid down procedures for culling, cataloguing and conservation, and there are Commonwealth and State archives for ultimate storage. For private industry the main imperative for retention is an on-going commercial value and defence in case of a legal challenge. However, when they have no further use, unless the owner recognises their historical value, there is oblivion - most are destroyed!

But all is not doom and gloom - owners can do a lot to ensure their documents are managed and properly cared for while they have commercial value, and there are things they can do to make them attractive to an ultimate repository.

The first thing owners should do is get their procedures right and this is best done by obtaining advice from and perhaps retaining, a professional archivist. Initial contact might best be made through the Australian Society of Archivists. Good procedures will involve:

- having an appropriate filing system;
- examining and culling records to reduce bulk by eliminating items that have no commercial, historical or heritage value; and
- properly handling, caring for and storing documents, to avoid deterioration.

When the documents have no further value to the owner, there are quite a few repositories interested in taking records that have been properly culled and catalogued, and are appropriately presented. Again, help and advice should be sought from a professional archivist.

Records describing non-government archives held in Australian repositories and libraries, are contained in the National Library of Australia’s Register of Australian Archives and Manuscripts (RAAM) database and in The Directory of Archives in Australia, which includes most of the repositories

available in RAAM. RAAM can be searched at <http://www.nla.gov.au/raam/> and information about the Directory of Archives in Australia is available at <http://www.asap.unimelb.edu.au/asa/directory/>

The National Archives and State Records NSW (and probably the archives offices in other States), publish a range of useful material on record-keeping and archives and both have websites which list their publications. The Australian Society of Archivists also publishes a book Keeping Archives which has become a standard text and manual.

The history of engineering and its contribution to the building of our nation cannot be adequately told without good documentation. It is up to us all to take the extra step to ensure our endeavours and our engineering heritage will be appreciated by future generations.

Happy Heritage Birthday!

Professor Ray Whitmore reminds us of an important anniversary

September 4th 1999 marks the 20th anniversary of the Inaugural Meeting of the National Committee for Engineering Heritage, or the National Panel for Engineering Heritage as it began life at that time. The possibility of establishing an Institution forum for engineering heritage dates back a further two years to March 1977, when members from most of the then existing Divisional engineering relics committees met in Cooma under the chairmanship of Barry Gear (General College Board and South Australian Division relics Committee) and resolved unanimously “to recommend to the General College Board of the IEAust. that it implement a standing sub-committee of the General College with membership of Gear (Chairman) [Denis] Cumming and [Peter] Sydenham who would share the task of considering National aspects of Relics work”.

This was the start of two years of planning and plotting, of policies and tactics, terminating in the establishment by the General College in February 1979 of a panel “to test whether the activity warrants a continued and therefore a more

permanent unit to be established”. The membership consisted of one chairman plus 9 members, comprising members from Divisions who were chairmen of heritage sub-committees plus two members considered expert in engineering heritage. Institution panels are generally ad-hoc committees formed to achieve a particular objective and are then intended to disappear. In fact, the Engineering Heritage Panel survived until 1990 when it became a Committee, carrying over with it a unique structure (for a National Committee) influenced by the fact that heritage is generally a secondary or hobby interest of members, where enthusiasm rather than professional expertise is the ruling force.

The members nominated for that first panel were:

- Professor R.L. Whitmore (Convenor), Queensland
- Dr P. Sydenham, Armidale
- Mr W.M. Shellshear, Canberra
- Mr A.E. Minty, Canberra
- Mr T. Roberts, Newcastle
- Dr L.C. Smidt, Victoria
- Mr A. Holton, South Australia
- Mr H. McFee, Tasmania
- Mr J.I. Muirhead, Sydney
- Mr K.C. Webster, Western Australia

Tarraleah Hydro-Electric Development Historic Engineering Marker



On Saturday, 10th April 1999 a ceremony was held at Tarraleah to present an Historic Engineering Marker to the Hydro Electric Corporation for the Tarraleah Power Development. -

The ceremony was held in the Tarraleah Village Hall where all facilities were available and in case of inclement weather which is always a

possibility in the highland area.

After an historical introduction by Mr Harry Gilbert (a member of the Engineering Heritage Committee) the plaque was presented to the HEC by the Tasmania Division President, Mr Steve Carter who spoke on the work of the Engineering Heritage Committee and the contributions of engineers to the present standard of living.

The plaque was then unveiled by His Excellency, Sir Guy Green, Governor of Tasmania who spoke on the great work carried out over the years by the HEC in developing Tasmania's water resources to produce power without pollution.

The Hon. Peter Rae, the Chairman of the HEC then received the plaque on behalf of his organisation and expressed his appreciation of the plaquing programme and mentioned possible future opportunities for recognition, particularly the Lake Margaret Power Station.

The ceremony was chaired by the Chairman of the Tasmania Division Engineering Heritage Committee, Mr Keith Drewitt. At the conclusion of the formalities some 70 people in attendance were treated to afternoon tea as guests of the Hydro Electric Corporation.

All in all this was a very successful function and appreciated by all present.

The Old Great North Road – a World-Class Engineering Masterpiece

The 240 km convict built Great North Road was constructed between 1826 and 1834 to provide an overland route between Sydney and the fertile Hunter Valley. At the time it was the largest public works project undertaken in the colony and remains one of the major engineering feats of Australia's convict era.

Much of the original road, including culverts, bridges and retaining walls, remains in use today with the original surface buried under layers of bitumen. Other parts, including the impressive Devines Hill section on the northern side of the Hawkesbury River, remain virtually intact, having been abandoned for alternative routes shortly after completion. This section of the Great North Road is now

within the Dharug National Park.

The NSW National Parks & Wildlife Service have recently implemented a programme of conservation management for their section of the Road. However the Road has many owners over its complete length including state government departments, numerous local councils and private landowners. A recently formed local community group based in the Bucketty/Wollombi area, calling themselves 'The Convict Trail Project' (www.budde.com.au), have been projecting the image of the Road as a significant historic asset of national importance. They have helped coordinate a number of workshops and research material including working with the Roads &

Traffic Authority and Dr Grace Karskens, archaeologist, on the preparation of a Conservation Plan.

The Road was the vision of Governor Darling who tried to endow the colony with 'a fine, permanent and all-encompassing road system'. It is a monument to the road building skills of the early colonial engineers and the endeavours of the 700 plus convict workforce, many in chain gangs. The engineers, in particular Lieutenant Percy Simpson, applied revolutionary road construction methods developed at the time by



The Devines Hill section of the Great Northern Road across the Hawkesbury River from Wisemans Ferry

British engineers including John Loudon MacAdam.

A National Engineering Landmark plaquing proposal for the full length of the Road is currently being developed by the Newcastle Division in collaboration with the Sydney Division. For further information on the project call Alastair Peddie on Ph. (02) 4974 2788 or Email apeddie@ncc.nsw.gov.au

Recent Releases

Eminent Queensland Engineers - Volume 2

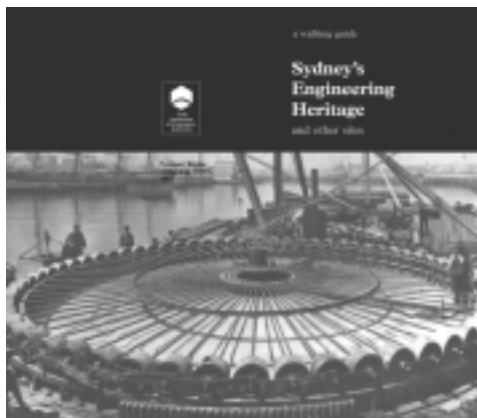
As foreshadowed in EHA No. 8, the Queensland Division of the Institution has published a second volume of *Eminent Queensland Engineers*. It is a continuation of the first volume published in 1984. An editorial sub-committee of the Heritage Panel of the Queensland Division led by Geoffrey Cossins compiled the new volume. When the sub-committee started work in 1997 they decided to conform to the practice of the Australian Dictionary of Biography and limit entries to engineers deceased before 1995. An extra provision was that the more recent engineers had to be eligible for corporate membership of the Institution. Each of the 51 engineers chosen has a photograph, a two page biography, and appropriate references.

Biographies are included of five engineers from the early colonial period (Queensland separated from New South Wales in 1859) when the new Queensland Government adopted a vigorous policy of infrastructure development to catch up with the southern colonies. Railways were built stretching westwards from ports to pastoral areas, a telegraph system rapidly linked the towns, many rivers were bridged, and major towns reticulated with water.

13 engineers who practised in the period 1880 to 1940 make up the next group in the

New Sydney Walking Tour Guide

Indefatigable member of the National Committee on Engineering Heritage and Sydney Division Heritage Committee, Michael Clarke, has produced a new edition of the much-acclaimed walking guide to inner Sydney's engineering heritage. Copies are available from Sydney Division office.



book. These engineers, most of whom were formally trained with two having Australian university degrees, had developed skills to cope with the changing technology required for electricity supplies, advanced methods of mineral processing, steel bridges, urban tramways, reinforced concrete etc. They were able to take advantage of the local capacity to fabricate structural sections, to make sugar milling machinery, and to build locomotives, ships, and steel bridges.

The third group of 33 engineers covered in the new volume were born between 1890 and 1910, almost all in Australia. Almost all had university degrees including many from University of Queensland which opened in 1911. All entered the profession after World War 1, and were hardly established when the Great Depression of the 1930s severely curtailed engineering expenditure.

The combination of the

Depression and the war resulted in a large backlog of engineering works to be overcome in the face of material and labour shortages, while consumer demands for services rose rapidly. The third group of engineers practised generally into the 1960s, with responsibilities for power stations, the Queensland wide grid, mining development, television services, automatic trunk telephony, freeways, beef roads, and major airports. They also saw the start of the computer age.

Eminent Queensland Engineers, Volume 2 is published in a handy A5 format. It is available from the Queensland Division Office of the Institution of Engineers, Australia, 447 Upper Edward Street, Brisbane, Queensland 4000. The price is \$10 for members, \$15 for non members, post paid. Contact the division office by phone (07) 3832 3749, by fax (07) 3832 2101, or by e-mail qld@eol.ieaust.org.au

Books

Two new books have come to the editor's attention which deserve a place in the library of anybody with an interest in the built environment and engineering heritage.

Firstly, from Emeritus Professor H.J. Cowan comes a breath of fresh air in his detailed account of the engineering, as opposed to architectural, history of Australia's buildings. Jack Cowan has long been an advocate for engineering heritage: he has been a member of the Sydney Division Engineering Heritage Committee for many years and was an Institution of Engineers Eminent Guest Speaker in 1994, culminating in his keynote address at the Christchurch Heritage Conference.

The book is: *From Wattle and Daub to Concrete and Steel – The Engineering Heritage of Australia's Buildings*, by Henry J. Cowan, Melbourne University Press, Melbourne 1998. 229 pp., ill., index. Price: \$A49.95.

In case readers missed it, an exciting new book on bridges was reviewed in the September 1999 Civil Edition of *Engineers Australia*. Having bought a copy before seeing the review, your editor couldn't put it down. It is made all the more attention-grabbing for Australian readers by the choice of the Sydney Harbour Bridge for the front cover photograph. Other superb colour photographs in the book are as wide as four pages, with double fold-outs.

Details are: *The Creation of Bridges*, by David Bennett, Thomas C. Lothian Pty Ltd 1999. 232 pp., hardback. Price: \$50.

The Second Australasian Conference on Engineering Heritage
14-16 February 2000, Auckland, New Zealand. Registration of interest available at www.cce.auckland.nz/engher or fax conference organizers at +64 9 373 7419.